REMARKS

The application has been amended and is believed to be in condition for allowance. Claims 20, 40 and 47 are amended as to form.

Claims 1-54 are pending, claims 1, 20, 40, and 47 being independent.

There are no formal matters outstanding.

Claims 1-39 stand rejected as obvious over DOI (JP 03-116898) in view of OHNO et al. 4,646,158 and in further view of ASAI et al. 6,409,159.

Claims 40-54 stand rejected as obvious over ASAI et al. in view of DOI and further in view of MURAMATSU et al. 5,703,665.

Claim 1 has been annotated to take into account the features of DOI, as expressed by the Official Action:

1. (previously presented) A signal processing circuit substrate assembly used for a liquid crystal display unit, comprising:

a signal processing circuit substrate **(pc board 12 of DOI Figure 1);**

a through-hole **(insertion hole 17 of DOI Figure 1)** formed through said signal processing circuit substrate;

a mounting member positioned opposite said through-hole and electrically connected at an edge thereof to the first surface of said signal processing circuit substrate; and

a device **(resistor 16 of DOI Figure 1)** electrically and mechanically mounted on a first surface of said mounting member, said device having a variable value and including a value adjustment portion through which said variable value is adjusted,

said value adjustment portion facing said through-hole **(screw slot aligned with hole 17 of DOI Figure 1)**.

As apparently acknowledged by the Official Action, the shortcomings of DOI, with respect to claim 1, are:

1) DOI does not disclose a mounting member opposite the through-hole and electrical connected to a signal processing circuit substrate (pc board 12).

2) DOI does not disclose the device (resistor 16) mounted on the missing mounted member but rather discloses the device (resistor 16) mounted on the signal processing circuit substrate (pc board 12).

3) DOI does not disclose a through-hole (hole 17) formed through said signal processing circuit substrate (pc board 12) but rather discloses the through-hole being in a second board (13 as per DOI abstract).

Contrary to the position taken by the Official Action, the resistor 16 of DOI is not in a "floating condition" with respect to hole 17.

Basically, DOI discloses the prior art technique of rigidly and fixedly attaching a variable resistor to a first pc board and making the device's adjustment portion accessible, in DOI's case via hole 17 formed in a second, adjacent pc board. This rigid relationship cannot be said to teach the resistor being in a floating condition.

The recitation that relates to the floating condition is found in dependent claim 3 and independent claim 20, e.g., claim 3 "wherein said mounting member is composed of flexible material electrically connecting opposite edges of the mounting member to said first surface of said signal processing circuit substrate, and said device is supported by said mounting member in a **displaceable floating condition** above said signal processing circuit substrate." The structure of DOI does not disclose a displaceable floating condition.

The secondary references do not fairly add these missing features of the recited invention and thus the obviousness rejection is not believed to be viable.

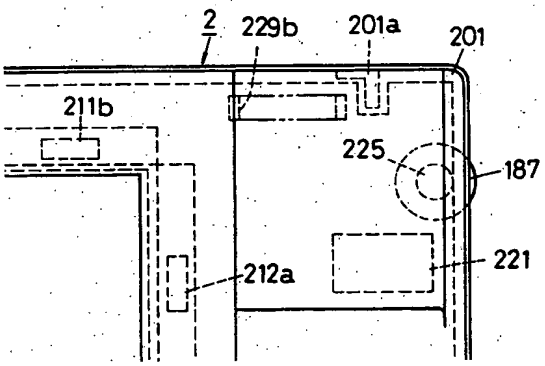
OHNO et al. has been offered as disclosing a liquid crystal television receiver (Figure 4) having a variable

resistor 225 located on the side of a substrate 229. OHNO et al. was offered as evidence for motivation to "preferentially locate a variable resistor on the side of a signal processing circuit substrate to easily control voltage applied to a display."

From this teaching, the Official Action concludes that it would have been obvious to position the DOI resistor 16 opposite hole 17, where the resistor 16 is connected at an edge thereof to a first surface of the signal processing circuit board 12 "to easily control voltage applied to a display and to ultimately control brightness." Applicants do not understand this conclusion. First, the DOI resistor 16 is a volume resistor (see Abstract). Second, the rejected claims require that the through-hole be in the recited signal processing circuit board; however, DOI resistor 16 is connected electrically and mechanically to operative circuitry located on pc board 12 whereas the hole 17 is in pc board 13. Thus, the conclusion reached in the Official Action is not understood and is not that recited.

Further, Figure 4 should be reviewed to understand the actual teachings of OHNO et al. The relevant portion of Figure 4 appears below.

FIG.4



The brightness controlling dial is shown as element 187, and comprises resistor 225. Please refer to column 3, beginning at about line 23:

"Referring to FIG. 4, the panel block 2 comprises a panel frame 201, … A brightness controlling dial 187 provided on the right side portion of the substrate 229 is integrated with a variable resistor 225 mounted on the substrate 229 so as to vary the voltage applied to the display panel 21 in order to adjust the brightness of the display surface." But see Figures 1-2 to understand this.

FIG.1

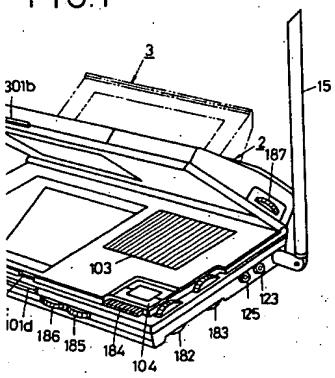
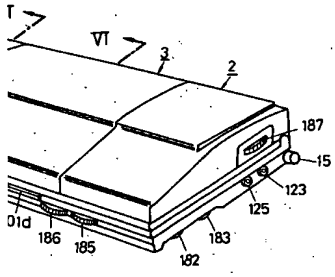


FIG.2



As can be seen from Figures 1-2, the controlling dial 187 extends outside the panel frame and device case so as to be user-operable.

Thus, the teaching of OHNO et al. is to position a control device (dial 187 with resistor 225) through the exterior of the device case so as to be user-accessible. There does not appear to be any other teachings as to how the dial and resistor are mounted on or with respect to any circuit board other than to be sufficiently close to extend through to the exterior for user operation.

This teaching of OHNO et al. would only move the DOI resistor 16 to an edge of pc board 12 and therefore not contribute to any of the missing recited features of the invention.

Neither DOI nor OHNO et al. are offered for the recited mounting member.

ASAI et al. is offered as teaching a method of supporting a pc board with a vibration absorption member, e.g., a sponge rubber member.

The Official Action concludes that "Asai is evidence … to support a variable resistor onto a mounting member so that the board could easily absorb shock applied to the board." This statement is not fully understood. ASAI et al. teach to vibration isolate a pc board, with a vibration absorption member, from external shock. Thus, ASAI et al. may fairly suggest to add vibration absorption members to intermediate a case and pc boards. However, the Official Action has yet to offer a teaching as to the mounting member and the recited relationship to the variable device, the substrate, and the through-hole.

Even if DOI were modified to add vibration absorption members, these recited features remain missing.

In view of the shortcomings of the proposed combination of DOI and OHNO et al. and ASAI et al., the

recitations of independent claims 1 and 20 are believed to be non-obvious. Reconsideration and allowance of these claims are respectfully requested. The dependent claims are believed allowable at least for depending from an allowable independent claim. The features of the dependent claims are believed to be independent allowable as the references are not seen and teaching or suggesting the recited features.

Claims 40-54 stand rejected as obvious over ASAI et al. in view of DOI and further in view of MURAMATSU et al. For claims 40-54, ASAI et al. is offered to disclose the recited method less; 1) a method of adjusting a variable resistor (for adjusting a resistor, DOI is offered) and 2) not explicitly disclosing the pc board being located on opposite edges of a signal processing circuit substrate (MURAMATSU et al. is offered for this).

Applicants disagree. ASAI et al. is not found to disclose the claim 40 recitation of "(a) mounting said [variable value] device onto an upper surface of a flexible member such that said value adjustment portion upwardly faces." Specifically, the Official Action has only identified ASAI et al. as teaching vibration damping. There has been no offer, and applicants do not find, a teaching of a variable value device being mounted to a flexible member, regardless of the positional mounting with respect to the flexible member.

Although ASAI et al. teach using flexible members as vibration devices, there is no teaching as to the recited "(b) bending said flexible member [mounting the device] at first lines thereof towards a lower surface of said flexible member; (c) bending said flexible member at second lines towards said upper surface, said second lines being located between said device and said first lines; and (d) fixing said flexible member at its opposite ends onto said first surface of said signal processing circuit substrate such that said value adjustment portion is exposed through a through-hole formed through said signal processing circuit substrate."

Note that ASAI et al. has not been indicated to teach fixing a flexible member mounting a device so that the adjustment portion of the device is exposed to a through-hole of a PC substrate."

Thus, even with the offered teachings of DOI and MURAMATSU et al., the recitations of independent claim 40 are not taught.

Independent claim 47 is not believed to be rendered obvious by the proposed combination relying on ASAI et al., DOI and MURAMATSU et al. ASAI et al. do not teach all the features of claim 47 and DOI and MURAMATSU et al. are not offered for the below recitations of claim 47:

(a) patterning a flexible printed circuit sheet into patterns which will make flexible printed circuits;

(b) covering said flexible printed circuit sheet with an electrical insulator;

(c) mounting said device on a second surface of said flexible printed circuit sheet;

(d) cutting said flexible printed circuit sheet into flexible printed circuits;

(e) downwardly bending said flexible printed circuit sheet at first lines across said device;

(f) upwardly bending said flexible printed circuit sheet at second lines across said device, said second lines being located between said device and said first lines; and

(g) fixing said flexible printed circuit sheet onto said first surface of said signal processing circuit substrate such that said value adjustment portion of said device is in alignment with a through-hole formed throughout said signal processing circuit substrate.

The Official Action points to ASAI et al. column 2, lines 24-67. This passage pertains to a summary of ASAI et al. outlining a device for supporting a pc board on a side to reduce vibration to the pc board. The specifically recited steps are not seen as being taught by this passage or by ASAI et al.

Absent teachings corresponding to the recited features of the claims, claims 40-52 cannot be said to be obvious. Reconsideration and allowance of those claims are therefore respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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